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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,267	11/17/2003	Nathan R. Brown	2269-4375.1US (99-1029.01)	4590
24247	7590	10/05/2005	EXAMINER	
TRASK BRITT P.O. BOX 2550 SALT LAKE CITY, UT 84110			MACARTHUR, SYLVIA	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/715,267

Applicant(s)

BROWN, NATHAN R.

Examiner

Sylvia R. MacArthur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/11/2005</u> | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-31 rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-21 of U.S. Patent No. 6,899,607. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the patent are directed to polishing comprising a plurality of independently moveable pressurization structures and actuators which are configured to bias a corresponding pressurization structure with a selected amount of force. The claims of the present invention are broader than those of the patent such that the patent obviates the claims of the present invention.

3. Claims 1-31 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-32 of copending Application No. 11/068666. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the copending application are directed to polishing comprising a plurality of independently moveable pressurization elements and a plurality of controllers which are associated to with corresponding pressurization elements with a

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selected amount of applied pressure. The claims of the present invention are broader than those of the copending application such that the patent obviates the claims of the present invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Claims 1-31 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of copending Application No. 11/128,144. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the copending application are directed to polishing comprising a plurality of independently moveable pressurization structures and a plurality of actuators which are associated to with corresponding pressurization elements with a selected amount of applied pressure. The claims of the present invention are broader than those of the copending application such that the patent obviates the claims of the present invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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2. Claims 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Williams (US 6,594,542).

Williams teaches a method and system of controlling CMP thickness removal.

Regarding claim 1:

The method used to control CMP comprises selectively applying a plurality of different amounts of pressure to different, selected locations of a backside of the semiconductor device structure and a polishing or planarizing at least one layer of the surface of the semiconductor device structure, see col. 6 lines 43-49.

3. Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Sommer (US 6,561,871).

Sommer teaches a linear drive system for CMP.

Re Claim 1: The method of Sommer teaches selectively applying a plurality of different amounts of pressure to different, selected locations of a backside of the semiconductor device structure and a polishing or planarizing at least one layer of the surface of the semiconductor device structure, see col. 15 lines 5-67.

Re Claim 2: The different amounts of pressure are provided by biasing independently movable pressurization structures, see col. 15 lines 15-20.

Re Claims 3-8: Magnets are used according to col. 15 lines 47-67.

Re Claim 9: The polishing discussed in Sommer is CMP according to the title.

Re Claim 10: The selectively applying a plurality of different amounts of pressure and the polishing or planarizing together effect the formation of a substantially planar surface on the semiconductor device structure, see the abstract.

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Re Claims 11-13: At least one raised surface has been located and the adequate pressure applied to planarize see col. 16 lines 3-32.

Re Claim 14: The polishing of Sommer comprises forming a substantially planar surface on the semiconductor device structure, see abstract.

Re Claim 15: The method of Sommer comprising substantially simultaneously applying the plurality of different amounts of pressure to the backside of the semiconductor device structure, see col. 16 lines 3-32.

4. Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al(US 6,436,828).

Chen et al teaches CMP using magnetic force.

Re Claim 1: The method of Chen et al teaches selectively applying a plurality of different amounts of pressure to different, selected locations of a backside of the semiconductor device structure and a polishing or planarizing at least one layer of the surface of the semiconductor device structure, see col. 6 lines 23-31.

Re Claim 2: The different amounts of pressure are provided by biasing independently movable pressurization structures (magnetic coils), see abstract and col. 4 lines 45-60.

Re Claims 3-8: Magnets are used according to the abstract

Re Claim 9: The polishing discussed in Chen et al is CMP according to the title.

Re Claim 10: The selectively applying a plurality of different amounts of pressure and the polishing or planarizing together effect the formation of a substantially planar surface on the semiconductor device structure, see the abstract and col. 6 lines 23-31.

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Re Claims 11-13: At least one raised surface has been located and the adequate pressure applied to planarize see col. col. 5 lines 59-67 and col. 6 lines 23-31.

Re Claim 14: The polishing of Chene et al comprises forming a substantially planar surface on the semiconductor device structure, see abstract.

Re Claim 15: The method of Chen et al comprising substantially simultaneously applying the plurality of different amounts of pressure to the backside of the semiconductor device structure, see col. col. 5 lines 59-67 and col. 6 lines 23-31.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 16-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer or Chen et al in view of Williams (US 6,594,542).

The teachings of Sommer and Chen et al were discussed above.

Sommer and Chen et al fail to polishing a second semiconductor structure based on the applied pressure of the first.

Williams teaches a method and system for controlling CMP removal.

Col.6 teaches that after the completion of the polishing process, a thickness measurement is taken by metrology device 300. A second wafer is then polished using that data.

The motivation to modify the teachings of Sommer or Chen et al is to enhance the capabilities of the apparatus from the application of pressure to a specific wafer to wafers

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in an entire lot or batch. The combined teachings of Sommer or Chen et al and Williams will increase throughput.

Response to Arguments

7. Applicant's arguments, filed 7/11/2005, with respect to the rejection(s) of claim(s) 1-31 under Wang et al have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Sommer, Chen et al, and above mentioned obviousness type provisional and nonstatutory rejections.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. Macarthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 9 a.m. and 3 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sylvia R MacArthur

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Patent Examiner
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October 2, 2005